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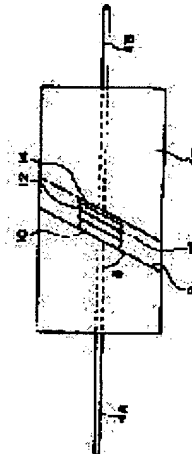
(21)Application number : **03-071769** (71)Applicant : **SUMITOMO ELECTRIC IND LTD**
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(54) OPTICAL ISOLATOR**(57)Abstract:**

PURPOSE: To eliminate the generation of the angle deviation between the optical fibers on an incident side and an exit side and to allow the assembly without adjustment by diagonally cutting a groove at the intermediate of one piece of the optical fiber embedded in a substrate and disposing polarization beam splitters and a Faraday rotor in this groove.

CONSTITUTION: The groove 8 to accommodate an optical element 6 is diagonally cut at a prescribed angle \square at the intermediate of one piece of the optical fiber 4 embedded in the substrate 2. The parallel flat plate-shaped polarization beam splitters 10, 12, 14 constituting the optical element 6 and the Faraday rotor 16 are disposed in this groove 8. Further, a cylindrical magnet is built to cover the rotor 16. The angle \square at which the groove 8 becomes the optical axis of the optical fibers 4 and the thicknesses of the beam splitters 10, 12, 14 are previously designed in such a manner that the refractive angle of the optical fibers 4 and the lateral deviation by the polarization beam splitters are offset. The light emitted from the beam splitter 14 on the output end side can, therefore, be made incident on the exit side optical fiber 4B existing in the same optical axis as the optical axis of the incident side optical fiber 4A.



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